AVAGO TECHNOLOGIES, LTD.
P.O. Box 1920
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ATTORNEY DOCKET NO. 70020717

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Chee

Serial No.: 10/667,078 **Examiner:** Huffman, Julian

Filing Date: September 18, 2003 **Group Art Unit:** 2853

Title: Print Mechanism Utilizing an Optical Imaging Sensor to Sense the Print Medium

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) **$500.00.**

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☒ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

☐	one month	$ 120.00
☐	two months	$ 450.00
☐	three months	$1020.00
☐	four months	$1590.00

☒ The extension fee has already been filled in this application.

☐ (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **50-3718** the sum of $500.00 . At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-3718** pursuant to 37 CFR 1.25.

A duplicate copy of this transmittal letter is enclosed.

☐ I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: **OR**

☒ I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Date of Facsimile: March 13, 2006

Typed Name: Calvin B. Ward

Signature: _____

Respectfully submitted,

Chee

By _____

Calvin B. Ward
Attorney/Agent for Applicant(s)

Reg. No. 30,896

Date: March 13, 2006

Telephone No. (925) 855-0413

Rev 12/05 (AplBrief)

PATENT APPLICATION
Attorney Docket: 70020717-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

Applicant:	Chee
Serial No.:	10/667,078
Filed:	9/18/2003
For:	Print Mechanism Utilizing an Optical Imaging Sensor to Sense the Print Medium
Group Art Unit:	2853
Examiner:	Huffman, Julian

BRIEF FOR APPELLANT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the decision of the Primary Examiner dated 11/15/2005. finally rejecting Claims 1-12 in the above-identified patent application

I. REAL PARTY IN INTEREST

The real party in interest is Avago Technologies, Inc. having an address as shown below.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to appellant, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-12 are currently pending in the above-identified patent application. In the Advisory Action dated 2/01/2006, the Examiner rejected Claims 1-12 and indicated that the Action was final.

IV. STATUS OF AMENDMENTS

An amendment under 37 C.F.R. 1.116 was filed on 1/12/2006. In an advisory action dated 2/01/2006, the Examiner indicated that the amendment would be entered on filing an appeal. The attached claims reflect this amendment. The Examiner also indicated that the rejections based on 35 U.S.C. 112, second paragraph were overcome by this amendment.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention includes a print mechanism and method for printing. The present invention can be more easily understood with reference to Figure 1, and the discussion thereof that begins on page 3, line5 of the specification. With reference to Claims 1 and 5, the print mechanism includes a print head assembly 16, an actuator 13, and a controller 45. The print head assembly includes a position detector 14 and a marking device 11. The position detector is discussed in more detail, starting at page 4, line 1, with reference to Figure 2. The position detector includes an imaging device 21 for forming an image of a portion of an edge of a print medium. Referring again to Figure 1, The actuator moves the print head assembly relative to the print medium in a predetermined direction. The controller determines a location for the edge of the print medium from the image formed by the imaging device. Both the apparatus claim (Claim 1) and the method claim (Claim 5) require the edge of the print medium to be determined from an image of a portion of the edge of the print medium.

With reference to Claims 2 and 8, the controller also determines a brightness value for the print medium from the image. This feature is discussed starting at page 6, linc 14 of the specification.

With reference to Claims 11 and 12, the determined brightness value can be utilized to alter the amount of ink deposited by the marking device.

With respect to Claim 10, images of all of the edges are formed and the length and width of the print medium is determined from these images. This feature is discussed starting at page 5, line 13 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Rejection of Claims 1-9 under 35 U.S.C. 102(e) as being anticipated by Endo (US 2004/0246285 A1).

B. Rejection of Claim 10 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Wen (US 6,109,745)

C. Rejection of Claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Miyakawa (US 4,617,580).

VII. ARGUMENT

A. Examiner's burden under 35 U.S.C. 102

The Examiner has the burden of showing by reference to the cited art each claim limitation in the reference. Anticipation under 35 U.S.C. 102 requires that each element of the claim in issue be found either expressly or inherently in a single prior art reference. In re King, 231 USPQ 136, 138 (Fed. Cir. 1986); Kalman v. Kimberly-Clark Corp., 218 USPQ 781, 789 (Fed. Cir. 1983). The mere fact that a certain thing may result from a given set of circumstances is not sufficient to sustain a rejection for anticipation. *Ex parte Skinner*, 2 USPQ2d 1788, 1789 (BdPatApp&Int 1986). "When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference" (*In re* Rijckaert, 28 USPQ2d, 1955, 1957).

B. Rejection of Claims 1-9 under 35 U.S.C. 102(e) as being anticipated by Endo

1. Rejection of Claims 1 and 5, and the claims dependent therefrom

Claim 1 requires that the apparatus includes a position detector comprising an imaging device for forming an image of a portion of an edge of a print medium. Claim 5 requires that an image of a portion of one of said edges of said print medium is formed and that the location of the imaged edge is determined from the formed image. Claims 2-4 depend from Claim 1, and Claims 6-9 depend from Claim 5. Applicant submits that there is no teaching in Endo of forming such an image, and hence, Endo could not anticipate these claims.

The Examiner maintains that sensor 29 taught in Endo is an imaging device that forms an image of a portion of an image of the print medium. The Examiner bases this conclusion on the fact that sensor 29 detects various edges of the print medium. The mere fact that the sensor detects the edge of the print medium does not prove that the sensor forms an image of a portion of one of the edges. A blind person can detect the edge of a curb without forming an image of the edge. The American Heritage Dictionary defines an image as "An optically formed duplicate, counterpart, or other representative reproduction of an object, especially an optical reproduction formed by a lens or mirror". The Examiner has not pointed to any teaching in Endo that sensor 29 forms an image of anything, no less the edge of the print medium.

The Examiner attempts to overcome this problem by stating that the broadest definition of an image is a "representative reproduction of an object". According to the Examiner this definition supports his rejection. Applicant must disagree. The Examiner has not pointed to any teaching in Endo that the sensor in Endo forms a reproduction of a portion of the print medium.

The Examiner goes on to state that extrinsic evidence should not be relied upon in interpreting claims. The Examiner ignores the rule that terms in claims are given their ordinary meaning in the art unless defined otherwise by the Applicant. Applicant's reference to the dictionary definition of image is used to support Applicant's assertion as to the ordinary meaning of the term. The Examiner has not presented any evidence that the term has a different meaning than that asserted by Applicant.

The Examiner also attempts to overcome these shortcomings in the Examiner's argument by stating that Applicant's apparatus uses a single photodetector 14, and hence, is the same as that taught in Endo. Applicant must disagree with the Examiner's reading of the present application. The specification of the present application refers to **a single position detector 14 that includes an imaging array**, and all embodiments of the position detector taught in the specification of that detector include multiple photodetectors. In particular, the specification teaches embodiments using one dimensional and two-dimensional imaging arrays.

The Examiner goes on to maintain that the photodetector in the present application measures light and dark regions to determine the positions of the edges of the print medium, and hence, Applicant has defined imaging to be such processing. First, Applicant must point out that absent a clear definition to the contrary, the terms in a patent application are given their ordinary meaning in the art. The Examiner has not pointed to any such clear definition that makes it clear that Applicant intends to define the term image differently from the ordinary meaning of the term. Second, the light and dark regions in question are within the image formed by the photodetector of the edges of the print medium, not merely light and dark regions as detected by a single photodetector as it crosses an edge.

Hence, the Examiner has not shown that each of the limitations of Claims 1 and 5 is present in Endo. Accordingly, Applicant submits that Claims 1 and 5 and the claims dependent therefrom are not anticipated by Endo.

2. Further arguments with respect to the rejection of Claims 2 and 8, and the claims dependent therefrom.

Claims 2 and 8 additionally require that a brightness value be determined for the print medium. The Examiner stated that the controller determines a brightness value for the print medium from the image. First, as noted above, Endo does not teach forming an image. Second, the cited paragraph refers to measuring the output of the photo sensor, not determining a brightness value for the print medium. The brightness value depends on the absolute intensity of the light source and the gain of the photo sensor. The Examiner has not

pointed to any such teaching in Endo. Hence, there are additional grounds for allowing Claims 2 and 8.

C. Further arguments with respect to the rejection of Claim 10 under 35 U.S.C. 193 over Endo in view of Wen

In making this rejection, the Examiner stated that Endo discloses everything claimed with the exception of determining the length and width of the print medium from a plurality of images of portions of an edge. The Examiner looks to Wen as teaching a sensor that determines the length and width of the print medium from a plurality of images of portions of the print medium. According to the Examiner, one would be motivated to include the sensor of Wen in the device of Endo to determine the size of the print medium during image processing.

It should be noted that Wen teaches a printing device having a moving image sensor that moves independent of the printing mechanism that consists of an inkjet printing bar. Hence, the combination of the teachings of the two references is a printer that has two moving assemblies, one that moves the image sensor and one that moves the print head. This is not the present invention as claimed in Claim 10. Furthermore, the device of Endo can already determine the size of the print medium by using the measured positions of the various edges; hence, there is no motivation to add a separate device for providing this function. Accordingly, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claim 10.

D. Further arguments with respect to the rejection of Claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Miyakawa

These claims require that the print mechanism dispenses ink on the print medium and that the quantity of ink be determined by a brightness value determined for the print medium from the image formed by the imaging device.

In making this rejection, the Examiner stated that Endo discloses everything claimed with the exception of dispensing a quantity of ink at one point on said print medium, wherein

said quantity depends on a determined brightness. The Examiner looks to Miyakawa as providing the missing teaching. First, as noted above, Endo does not teach the imaging limitation of the claims in question. Second, contrary to the Examiner's assertion, Miyakawa does not teach altering the amount of ink dispensed based on a determination of the brightness of the print medium. Miyakawa teaches changing the quantity of ink dispensed based on whether the print medium is transparent. The system taught in Miyakawa at the cited passage does not measure the amount of light reflected from the medium, i.e., the brightness. The sensors measure the amount of light that is transmitted by the medium. It should be noted that the system taught in Miyakawa dispenses the same amount of ink on a black piece of paper that it dispenses on a white piece of paper. Hence, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claims 11 and 12.

VII. CONCLUSION

Appellants respectfully submit that for the reasons of fact and law argued herein, the decision of the Examiner in finally rejecting Claims 1-12 should be reversed.

I hereby certify that this paper (along with any others attached hereto) is being sent via facsimile to fax number: 571-273-8300.

Respectfully Submitted,

Calvin B. Ward
Registration No. 30,896
Date: March 13, 2006

Avago Technologies, LTD.
P.O. Box 1920
Denver, CO 80201-1920
Telephone (925) 855-0413
Telefax (925) 855-9214

Claims Appendix

THE CLAIMS ON APPEAL:

1. A print mechanism comprising:

a print head assembly comprising a position detector and a marking device, said position detector comprising an imaging device for forming an image of a portion of an edge of a print medium, said print medium having a top edge, side edges, and a bottom edge;

an actuator for moving said print head assembly relative to said print medium in a predetermined direction; and

a controller for determining a location for at least one of said edges of said print medium from said formed image.

2. The print mechanism of Claim 1 wherein said controller determines a brightness value for said print medium from said image.

3. The print mechanism of Claim 1 wherein said controller determines a location for said top edge of said print medium from said image.

4. The print mechanism of Claim 1 wherein said controller determines if said print medium is correctly aligned in said print mechanism by comparing a plurality of edge locations measured at different distances from said top edge of said print medium.

5. A method for printing on a print medium having a top edge, a bottom edge and side edges, said method comprising:

forming an image of a portion of one of said edges of said print medium; and

determining a location for said imaged edge of said print medium from said image.

6. The method of Claim 5 wherein said imaged edge is one of said side edges.

7. The method of Claim 5 wherein said imaged edge is said top edge.

8. The method of Claim 5 further comprising determining a brightness measure for said print medium from said image.

9. The method of Claim 5 further comprising determining the alignment of said print medium in a print mechanism by comparing a plurality of images of portions of said edge of said print medium.

10. The method of Claim 5 further comprising forming an image of a portion of the others of said edges and determining a length and width for said print medium from said formed images.

11. The method of Claim 8 wherein said printing comprises dispensing a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

12. The print mechanism of Claim 2 wherein said marking device dispenses a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

Evidence Appendix

none

Related Proceedings Appendix

none

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MAR 1 3 2006

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Attorney Docket: 70020717-1

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Applicant:	Chee
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Hence, the Examiner has not shown that each of the limitations of Claims 1 and 5 is present in Endo. Accordingly, Applicant submits that Claims 1 and 5 and the claims dependent therefrom are not anticipated by Endo.

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D. Further arguments with respect to the rejection of Claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Miyakawa

These claims require that the print mechanism dispenses ink on the print medium and that the quantity of ink be determined by a brightness value determined for the print medium from the image formed by the imaging device.

In making this rejection, the Examiner stated that Endo discloses everything claimed with the exception of dispensing a quantity of ink at one point on said print medium, wherein

said quantity depends on a determined brightness. The Examiner looks to Miyakawa as providing the missing teaching. First, as noted above, Endo does not teach the imaging limitation of the claims in question. Second, contrary to the Examiner's assertion, Miyakawa does not teach altering the amount of ink dispensed based on a determination of the brightness of the print medium. Miyakawa teaches changing the quantity of ink dispensed based on whether the print medium is transparent. The system taught in Miyakawa at the cited passage does not measure the amount of light reflected from the medium, i.e., the brightness. The sensors measure the amount of light that is transmitted by the medium. It should be noted that the system taught in Miyakawa dispenses the same amount of ink on a black piece of paper that it dispenses on a white piece of paper. Hence, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claims 11 and 12.

VII. CONCLUSION

Appellants respectfully submit that for the reasons of fact and law argued herein, the decision of the Examiner in finally rejecting Claims 1-12 should be reversed.

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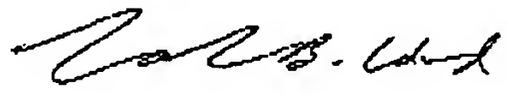

Calvin B. Ward
Registration No. 30,896
Date: March 13, 2006

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Claims Appendix

THE CLAIMS ON APPEAL:

1. A print mechanism comprising:

a print head assembly comprising a position detector and a marking device, said position detector comprising an imaging device for forming an image of a portion of an edge of a print medium, said print medium having a top edge, side edges, and a bottom edge;

an actuator for moving said print head assembly relative to said print medium in a predetermined direction; and

a controller for determining a location for at least one of said edges of said print medium from said formed image.

2. The print mechanism of Claim 1 wherein said controller determines a brightness value for said print medium from said image.

3. The print mechanism of Claim 1 wherein said controller determines a location for said top edge of said print medium from said image.

4. The print mechanism of Claim 1 wherein said controller determines if said print medium is correctly aligned in said print mechanism by comparing a plurality of edge locations measured at different distances from said top edge of said print medium.

5. A method for printing on a print medium having a top edge, a bottom edge and side edges, said method comprising:

forming an image of a portion of one of said edges of said print medium; and

determining a location for said imaged edge of said print medium from said image.

6. The method of Claim 5 wherein said imaged edge is one of said side edges.

7. The method of Claim 5 wherein said imaged edge is said top edge.

8. The method of Claim 5 further comprising determining a brightness measure for said print medium from said image.

9. The method of Claim 5 further comprising determining the alignment of said print medium in a print mechanism by comparing a plurality of images of portions of said edge of said print medium.

10. The method of Claim 5 further comprising forming an image of a portion of the others of said edges and determining a length and width for said print medium from said formed images.

11. The method of Claim 8 wherein said printing comprises dispensing a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

12. The print mechanism of Claim 2 wherein said marking device dispenses a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

Evidence Appendix

none

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none

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An amendment under 37 C.F.R. 1.116 was filed on 1/12/2006. In an advisory action dated 2/01/2006, the Examiner indicated that the amendment would be entered on filing an appeal. The attached claims reflect this amendment. The Examiner also indicated that the rejections based on 35 U.S.C. 112, second paragraph were overcome by this amendment.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention includes a print mechanism and method for printing. The present invention can be more easily understood with reference to Figure 1, and the discussion thereof that begins on page 3, line5 of the specification. With reference to Claims 1 and 5, the print mechanism includes a print head assembly 16, an actuator 13, and a controller 45. The print head assembly includes a position detector 14 and a marking device 11. The position detector is discussed in more detail, starting at page 4, line 1, with reference to Figure 2. The position detector includes an imaging device 21 for forming an image of a portion of an edge of a print medium. Referring again to Figure 1, The actuator moves the print head assembly relative to the print medium in a predetermined direction. The controller determines a location for the edge of the print medium from the image formed by the imaging device. Both the apparatus claim (Claim 1) and the method claim (Claim 5) require the edge of the print medium to be determined from an image of a portion of the edge of the print medium.

With reference to Claims 2 and 8, the controller also determines a brightness value for the print medium from the image. This feature is discussed starting at page 6, line 14 of the specification.

With reference to Claims 11 and 12, the determined brightness value can be utilized to alter the amount of ink deposited by the marking device.

With respect to Claim 10, images of all of the edges are formed and the length and width of the print medium is determined from these images. This feature is discussed starting at page 5, line 13 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Rejection of Claims 1-9 under 35 U.S.C. 102(e) as being anticipated by Endo (US 2004/0246285 A1).

B. Rejection of Claim 10 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Wen (US 6,109,745)

C. Rejection of Claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Miyakawa (US 4,617,580).

VII. ARGUMENT

A. Examiner's burden under 35 U.S.C. 102

The Examiner has the burden of showing by reference to the cited art each claim limitation in the reference. Anticipation under 35 U.S.C. 102 requires that each element of the claim in issue be found either expressly or inherently in a single prior art reference. In re King, 231 USPQ 136, 138 (Fed. Cir. 1986); Kalman v. Kimberly-Clark Corp., 218 USPQ 781, 789 (Fed. Cir. 1983). The mere fact that a certain thing may result from a given set of circumstances is not sufficient to sustain a rejection for anticipation. *Ex parte Skinner*, 2 USPQ2d 1788, 1789 (BdPatApp&Int 1986). "When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference" (*In re* Rijckaert, 28 USPQ2d, 1955, 1957).

B. Rejection of Claims 1-9 under 35 U.S.C. 102(e) as being anticipated by Endo

1. Rejection of Claims 1 and 5, and the claims dependent therefrom

Claim 1 requires that the apparatus includes a position detector comprising an imaging device for forming an image of a portion of an edge of a print medium. Claim 5 requires that an image of a portion of one of said edges of said print medium is formed and that the location of the imaged edge is determined from the formed image. Claims 2-4 depend from Claim 1, and Claims 6-9 depend from Claim 5. Applicant submits that there is no teaching in Endo of forming such an image, and hence, Endo could not anticipate these claims.

The Examiner maintains that sensor 29 taught in Endo is an imaging device that forms an image of a portion of an image of the print medium. The Examiner bases this conclusion on the fact that sensor 29 detects various edges of the print medium. The mere fact that the sensor detects the edge of the print medium does not prove that the sensor forms an image of a portion of one of the edges. A blind person can detect the edge of a curb without forming an image of the edge. The American Heritage Dictionary defines an image as "An optically formed duplicate, counterpart, or other representative reproduction of an object, especially an optical reproduction formed by a lens or mirror". The Examiner has not pointed to any teaching in Endo that sensor 29 forms an image of anything, no less the edge of the print medium.

The Examiner attempts to overcome this problem by stating that the broadest definition of an image is a "representative reproduction of an object". According to the Examiner this definition supports his rejection. Applicant must disagree. The Examiner has not pointed to any teaching in Endo that the sensor in Endo forms a reproduction of a portion of the print medium.

The Examiner goes on to state that extrinsic evidence should not be relied upon in interpreting claims. The Examiner ignores the rule that terms in claims are given their ordinary meaning in the art unless defined otherwise by the Applicant. Applicant's reference to the dictionary definition of image is used to support Applicant's assertion as to the ordinary meaning of the term. The Examiner has not presented any evidence that the term has a different meaning than that asserted by Applicant.

The Examiner also attempts to overcome these shortcomings in the Examiner's argument by stating that Applicant's apparatus uses a single photodetector 14, and hence, is the same as that taught in Endo. Applicant must disagree with the Examiner's reading of the present application. The specification of the present application refers to **a single position detector 14 that includes an imaging array**, and all embodiments of the position detector taught in the specification of that detector include multiple photodetectors. In particular, the specification teaches embodiments using one dimensional and two-dimensional imaging arrays.

The Examiner goes on to maintain that the photodetector in the present application measures light and dark regions to determine the positions of the edges of the print medium, and hence, Applicant has defined imaging to be such processing. First, Applicant must point out that absent a clear definition to the contrary, the terms in a patent application are given their ordinary meaning in the art. The Examiner has not pointed to any such clear definition that makes it clear that Applicant intends to define the term image differently from the ordinary meaning of the term. Second, the light and dark regions in question are within the image formed by the photodetector of the edges of the print medium, not merely light and dark regions as detected by a single photodetector as it crosses an edge.

Hence, the Examiner has not shown that each of the limitations of Claims 1 and 5 is present in Endo. Accordingly, Applicant submits that Claims 1 and 5 and the claims dependent therefrom are not anticipated by Endo.

2. Further arguments with respect to the rejection of Claims 2 and 8, and the claims dependent therefrom.

Claims 2 and 8 additionally require that a brightness value be determined for the print medium. The Examiner stated that the controller determines a brightness value for the print medium from the image. First, as noted above, Endo does not teach forming an image. Second, the cited paragraph refers to measuring the output of the photo sensor, not determining a brightness value for the print medium. The brightness value depends on the absolute intensity of the light source and the gain of the photo sensor. The Examiner has not

pointed to any such teaching in Endo. Hence, there are additional grounds for allowing Claims 2 and 8.

C. Further arguments with respect to the rejection of Claim 10 under 35 U.S.C. 193 over Endo in view of Wen

In making this rejection, the Examiner stated that Endo discloses everything claimed with the exception of determining the length and width of the print medium from a plurality of images of portions of an edge. The Examiner looks to Wen as teaching a sensor that determines the length and width of the print medium from a plurality of images of portions of the print medium. According to the Examiner, one would be motivated to include the sensor of Wen in the device of Endo to determine the size of the print medium during image processing.

It should be noted that Wen teaches a printing device having a moving image sensor that moves independent of the printing mechanism that consists of an inkjet printing bar. Hence, the combination of the teachings of the two references is a printer that has two moving assemblies, one that moves the image sensor and one that moves the print head. This is not the present invention as claimed in Claim 10. Furthermore, the device of Endo can already determine the size of the print medium by using the measured positions of the various edges; hence, there is no motivation to add a separate device for providing this function. Accordingly, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claim 10.

D. Further arguments with respect to the rejection of Claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Miyakawa

These claims require that the print mechanism dispenses ink on the print medium and that the quantity of ink be determined by a brightness value determined for the print medium from the image formed by the imaging device.

In making this rejection, the Examiner stated that Endo discloses everything claimed with the exception of dispensing a quantity of ink at one point on said print medium, wherein

said quantity depends on a determined brightness. The Examiner looks to Miyakawa as providing the missing teaching. First, as noted above, Endo does not teach the imaging limitation of the claims in question. Second, contrary to the Examiner's assertion, Miyakawa does not teach altering the amount of ink dispensed based on a determination of the brightness of the print medium. Miyakawa teaches changing the quantity of ink dispensed based on whether the print medium is transparent. The system taught in Miyakawa at the cited passage does not measure the amount of light reflected from the medium, i.e., the brightness. The sensors measure the amount of light that is transmitted by the medium. It should be noted that the system taught in Miyakawa dispenses the same amount of ink on a black piece of paper that it dispenses on a white piece of paper. Hence, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claims 11 and 12.

VII. CONCLUSION

Appellants respectfully submit that for the reasons of fact and law argued herein, the decision of the Examiner in finally rejecting Claims 1-12 should be reversed.

I hereby certify that this paper (along with any others attached hereto) is being sent via facsimile to fax number: 571-273-8300.

Respectfully Submitted,

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Claims Appendix

THE CLAIMS ON APPEAL:

1. A print mechanism comprising:

a print head assembly comprising a position detector and a marking device, said position detector comprising an imaging device for forming an image of a portion of an edge of a print medium, said print medium having a top edge, side edges, and a bottom edge;

an actuator for moving said print head assembly relative to said print medium in a predetermined direction; and

a controller for determining a location for at least one of said edges of said print medium from said formed image.

2. The print mechanism of Claim 1 wherein said controller determines a brightness value for said print medium from said image.

3. The print mechanism of Claim 1 wherein said controller determines a location for said top edge of said print medium from said image.

4. The print mechanism of Claim 1 wherein said controller determines if said print medium is correctly aligned in said print mechanism by comparing a plurality of edge locations measured at different distances from said top edge of said print medium.

5. A method for printing on a print medium having a top edge, a bottom edge and side edges, said method comprising:

forming an image of a portion of one of said edges of said print medium; and

determining a location for said imaged edge of said print medium from said image.

6. The method of Claim 5 wherein said imaged edge is one of said side edges.

7. The method of Claim 5 wherein said imaged edge is said top edge.

8. The method of Claim 5 further comprising determining a brightness measure for said print medium from said image.

9. The method of Claim 5 further comprising determining the alignment of said print medium in a print mechanism by comparing a plurality of images of portions of said edge of said print medium.

10. The method of Claim 5 further comprising forming an image of a portion of the others of said edges and determining a length and width for said print medium from said formed images.

11. The method of Claim 8 wherein said printing comprises dispensing a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

12. The print mechanism of Claim 2 wherein said marking device dispenses a quantity of ink at one point on said print medium and wherein said quantity depends on said determined brightness measure.

Evidence Appendix

none

Related Proceedings Appendix

none